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THE SILVER INSTITUTE LETTER

INFORMATION ON SILVER FOR INDUSTRY

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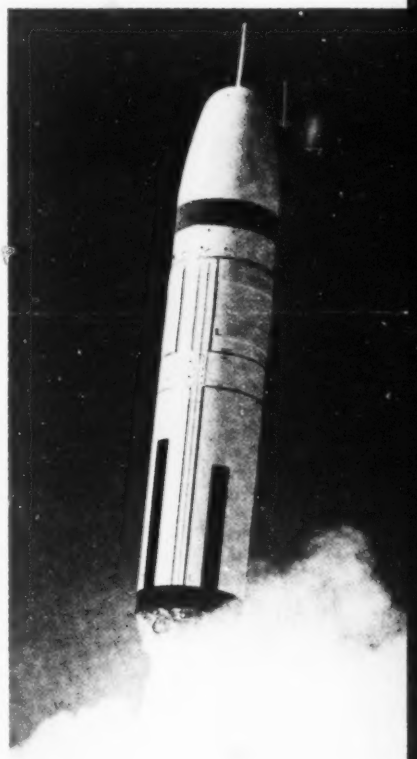
SILVER MAKES ALLOYS TOUGH

Aluminum, magnesium, copper, lead, and tin benefit from the addition of silver. **The inclusion of silver in aluminum alloys in an amount of only 0.5% results in the strongest aluminum casting alloy yet discovered.** A few years ago, metallurgists found that this small addition of silver resulted in an enormous improvement in performance.

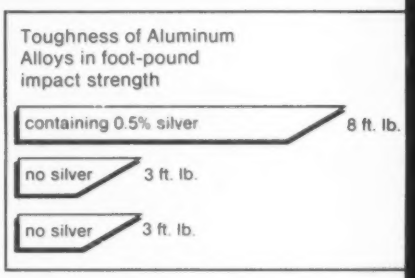
A major application of this alloy is in the Trident I missile *(shown at right)* wherein 29 aluminum-silver alloy castings are used. Research conducted at the Northrup Corporation, Hawthorne, California shows that the silver forms a strong intergranular composition that reduces the brittleness of the cast aluminum alloy. This results in a markedly increased toughness as shown in the graph *below right.*



Now further investigations underwritten by the **U.S. Naval Air Systems Command,** reported in the October 1981 issue of NEW SILVER TECHNOLOGY, show that by simply pressurizing a heated casting of the aluminum-silver alloy (A201-T7) with an inert gas, gives the casting reliable strength to the same degree of similar parts produced from conventional aluminum alloys by expensive forging and machining. **This has opened the potential for advantageous use of the aluminum-silver alloy throughout the aircraft and other industries.**

Magnesium Electron Ltd., Winchester, England now includes 2.5% silver in its magnesium alloy for gear cases of the new jet engines which must stand long exposure at high temperatures.

Inclusion of silver also has remarkable effects on copper. The **Copper Development Association,** 405 Lexington Ave., New York, N.Y., 10017 administers specifications on 14 different copper alloys which contain 8 to 30 troy ounces of silver per ton. **With silver the copper performs at high temperatures, remaining tough even in reducing atmospheres, resisting both softening and embrittlement.** The copper-silver alloy also is easily bonded for applications throughout the electrical and electronic industries.



For assembling copper tubing **household water supply systems, solar heating systems** and many types of household and industrial equipment where low temperature soldering must produce tough and perfect joints, solder containing 5% silver in tin gives maximum performance with minimum labor of application.

Also, the **radiators** of the new model automobiles must withstand higher driving temperatures and pressures. To meet these conditions the manufacturers include **0.5% silver in the lead solder so that it maintains its perfect seal and toughness.**

SILVER LEADERS FROM FIVE CONTINENTS MEET

Leaders of the silver industry from Asia, Australia, Europe, North America and South America met at a Silver Institute luncheon meeting on Wednesday, September 30th in Denver, Colorado. Added to the Board of Directors were Setsuo Takashima of Mitsui Mining & Smelting Co., Ltd., Japan; Kent D. Hoffman of Texasgulf Metals Co., Canada; and David E. P. Lindh of Coeur d'Alene Mines Corporation, Idaho.

With Institute Chairman Bernhard Rohe of Industrias Peñoles, S.A. presiding, the Board reviewed the current work of the Institute in extending the beneficial uses of silver and silver

Among those attending the Meeting. **Above,** *(l. to r.) Silver Institute Chairman Bernhard Rohe of Peñoles, Institute President Alex Schmidt-Fellner of AMAX; Regional Vice Presidents for Western U.S., George Kent of Bunker Hill; for South America, Ernesto Baertl of Minas Arcata; for Mexico and Central America, Enrique Ibarra of Real de Monte y Pachuca; for Australia and Asia, Seiichi Ohtsuki, representing Yoshihiro Inai of Mitsubishi Metal. Present but not pictured here: for Eastern U.S., Francis Curren of Pease & Curren, and for Canada, Kenneth A. Laidman of Engelhard Ltd.*

Above *(l. to r.) Peter C. Barnett of North Broken Hill, Australia; Y. Shibuya of Nippon Mining, Japan; Paul Jeanty of Samuel Montagu, Great Britain; Charles F. Barber, Richard deJ. Osborne and James C. Buck of ASARCO.*

Left *(l. to r.) David Lindh of Coeur d'Alene Mines, Idaho; Kent D. Hoffman of Texasgulf Metals Canada.*

At right, *Felix Freeman of J. Aron (left) admires the new silver electrical products made by S.G. Daga (right) of Luxmi Traders, India.*

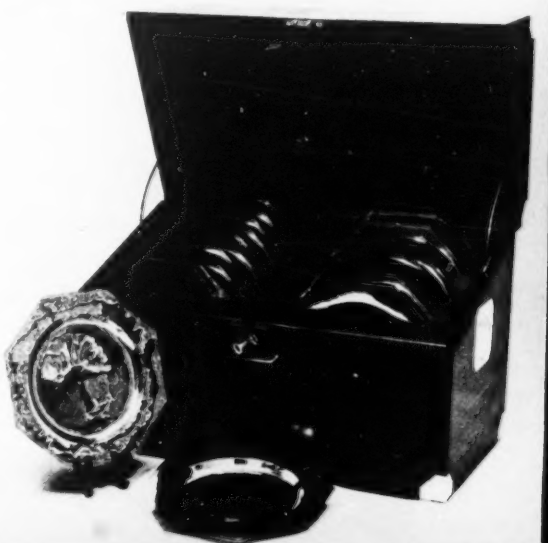
products, and in providing precise and timely statistics on silver. Institute President Alex Schmidt-Fellner of AMAX Inc., led the discussion of plans for carrying out these and other imporant activities of The Silver Institute in the forthcoming months, as proposed by Anthony M.B. Hart of Johnson Matthey Ltd., Philip M. Lindstrom of Hecla Mining Co. and George C. Havener of ASARCO Inc., Chairmen of the Institute's Market Development, Publications and Statistics Committees.

AUSTRALIA'S STERLING SILVER ROYAL WEDDING GIFT

Prince Charles and Lady Diana recently received, as a wedding gift from Australia's government, the handsome set of **twenty solid sterling silver platters** in a French-polished wooden case, decorated with hand-made silver fittings, *as shown at right.* Commissioned to make this gift was the famous Australian silversmith, **Hendrick Forster,** 25 Portland Place, South Yarra 3141, Australia.

Mr. Forster says that each of the 20 platters contain well over a pound of silver that originally came from **Broken Hill Associated Smelters,** and was later converted into sheet silver by **Johnson Matthey Pty.** About 1,000 skilled-craftsmen man hours were used in the creation of this beautiful gift.

The lid of the wooden presentation case has an inlaid silver plaque with the following words engraved, "Presented to His Royal Highness, the Prince of Wales and the Lady Diana Spencer by the Commonwealth Government on behalf of the People of Australia on the occasion of their Marriage, 29 July 1981."



ENORMOUS INCREASE IN SILVER COIN ISSUING COUNTRIES IN PAST DECADE

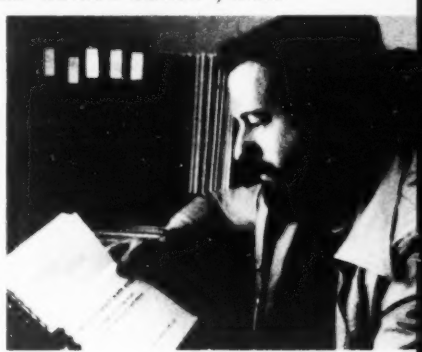
Since The Silver Institute began working with the world's monetary authorities in 1971, by providing technical assistance in connection with the minting of silver coinages, **the number of nations that issue silver legal tender coins has grown from 34 in 1970 to 84 countries in 1980.**

Among the nations that have contributed to this surge in the number of silver coinages are some of the largest and the smallest nations in the world–Canada, the People's Republic of China, Bhutan, the Soviet Union, Fiji, Great Britain, Lesotho, Mexico and Sweden, just to name a few of the fifty countries that issued silver coinages in 1980 but did not issue silver coins in 1970.

The themes used in creation of silver commemorative coins have been as varied as are the backgrounds, cultures, traditions and personages of the issuing nations. But **Silver Institute studies would indicate that the silver coins that have gained widest popularity** have included coins commemorating the Olympic Games or other international athletic events; conservation of flora and fauna; the birth or death anniversary of a person of international importance; attractive renderings of local tourist attractions; and causes, symbols, or events that transcend national boundaries.

On one hand, there is Singapore's large, 40.7 mm in diameter (well over an inch and a half) and weighing a full troy ounce, 50 Dollar silver coin, which calls attention to Singapore's role as a financial center by showing currency symbols for the dollar, franc, yen, mark, and the pound. *Shown above,* this coin's popularity–based on international financial symbolism–was sufficient to justify its reissue this year. On the other hand, other coins, such as those honoring the 80th birthday of Queen Elizabeth, the Queen Mother of Great Britain, were minted by several nations and enjoyed demand by collectors in many other nations, but because of the nature of the theme, it is probable that these coins will never be reissued.

Already **in 1981, at least a dozen countries have issued silver coins which did not mint silver coins in the previous year.** Some nations are honoring the British Royal Wedding of Prince Charles and Lady Diana with beautiful sterling silver coins while others, like the Republic of Seychelles are minting sterling silver coins dedicated to other themes such as the coin, *shown at left,* which Seychelles recently issued as part of the UNICEF International Year of the Child Proof Coin Collection. Additional information about this coin featuring children of Seychelles dancing the traditional "centre-dance", with a *coco de mer* tree in the background, may be obtained from **Paramount Coin Corporation,** One Englewood Plaza, Englewood, Ohio 45322. And for the Silver Institute's latest edition of its uniquely detailed book, **MODERN SILVER COINAGE-1980, it is available from the Institute for only $10 per copy, including postage.**



ANOTHER NEW MEMBER WELCOMED

The Silver Institute welcomes to membership, **Korkos Precious Metals, Inc.,** P.O. Box 1305, College Station, Fredericksburg, VA 22402, represented in Institute matters by its President, John S. Korkos, shown at right in a visit to The Silver Institute office.

SEPTEMBER SEES SOME RECOVERY IN SILVER REFINERS' ACTIVITIES

As shown by the totals on the next page, the disposition of 999 silver by fabricating it in refiners' plants and by shipping it out to others, increased for U.S. refiners from 9.8 million troy ounces in August, to 10.6 million troy ounces in September. The corresponding disposition figures for Non-U.S. participating refiners showed an increase from 18.2 in August to 18.7 in September. The stocks in the hands of U.S. refiners remained at 2.6 million troy ounces (about 7 days supply), and the Non-U.S. participating refiners' stocks declined to 5.3 million troy ounces (about 9 days supply).

LATEST SILVER INSTITUTE REFINING STATISTICS

Production and Disposition of **999 Silver Bars** by All Known Refiners in the United States

	TROY OUNCES	MILLION TROY OUNCES				
	September 1981	Sep 1981	Aug 1981	Jan-Sep 1981	Jan-Sep 1980	Full Yr 1980
THESE REFINERS' PRODUCTION, BY SOURCE		*MONTHLY RATE*				
From Primary (ores & concentrates)	4,051,341	4.1	3.9	3.9	3.6	3.4
From Coins	33,965	0.0+	0.1	0.2	1.8	1.4
From Old Scrap (used photo film & other products)	4,464,089	4.5	4.1	4.9	6.4	6.2
From New Scrap (in-plant clippings, waste)*	1,983,288	2.0	2.0	2.3	2.7	2.8
TOTAL PRODUCTION	10,532,683	10.5	10.1	11.2	14.5	13.9
TOTAL PRODUCTION Less New Scrap*	8,549,395	8.5	8.2	9.0	11.8	11.1
ABOVE TOTAL PRODUCTION, BY OWNERSHIP						
From Refiners' Own or Purchased Materials	7,590,391	7.6	8.1	8.2	9.4	9.2
Refined on Toll for Others	2,942,292	2.9	2.0	3.0	5.1	4.7
DISPOSITION BY THESE REFINERS						
Converted in Plant (consumed in fabricating, etc.)	2,889,718	2.9	3.1	3.3	4.8	4.9
Shipped Out: Own materials	5,291,122	5.3	4.7	5.0	4.8	4.5
Against Tolls	2,390,684	2.4	2.0	2.8	4.9	4.5
TOTAL DISPOSITION	10,571,524	10.6	9.8	11.1	14.6	13.9
TOTAL DISPOSITION Less New Scrap*	8,588,236	8.6	7.8	8.1	11.9	11.1
RESULTING CHANGE OF THESE REFINERS'		*TOTAL FOR PERIOD*				
STOCKS (Production Minus Disposition)	−38,841	−0.0+	+0.3	+1.5	−0.8	−0.5
THESE REFINERS' STOCKS AT END OF PERIOD	2,573,003	2.6	2.6	2.6	0.8	1.1

Production and Disposition of **999 Silver Bars** by All Known Refiners in Australia, Canada, Mexico, Peru, South Africa and Sweden; and some other Refiners in Europe and Asia.

	TROY OUNCES	MILLION TROY OUNCES				
	September 1981	Sep 1981	Aug 1981	Jan-Sep 1981	Jan-Sep 1980	Full Yr 1980
THESE REFINERS' PRODUCTION, BY SOURCE		*MONTHLY RATE*				
From Primary (ores & concentrates)	12,497,398	12.5	11.7	12.1	12.1	12.0
From Coins	80,312	0.1	0.0	0.1	0.1	0.1
From Old Scrap (used photo film & other products)	4,383,612	4.4	5.0	5.4	7.8	7.4
From New Scrap (in-plant clippings, waste)*	800,467	0.8	0.9	1.0	1.4	1.4
TOTAL PRODUCTION	17,761,789	17.8	17.6	18.5	21.4	21.0
TOTAL PRODUCTION Less New Scrap*	16,961,322	17.0	16.7	17.5	20.0	19.5
ABOVE TOTAL PRODUCTION, BY OWNERSHIP						
From Refiners' Own or Purchased Materials	15,373,969	15.4	15.4	15.6	17.5	17.2
Refined on Toll for Others	2,387,820	2.4	2.1	2.9	3.9	3.8
DISPOSITION BY THESE REFINERS						
Converted in Plant (consumed in fabricating, etc.)	4,091,450	4.1	4.8	4.9	7.5	7.0
Shipped Out: Own materials	12,075,296	12.1	11.4	11.0	10.3	10.4
Against Tolls	2,578,063	2.6	2.0	2.8	3.3	3.3
TOTAL DISPOSITION	18,744,809	18.7	18.2	18.8	21.1	20.8
TOTAL DISPOSITION Less New Scrap*	17,944,342	17.9	17.3	17.8	19.7	19.3
RESULTING CHANGE OF THESE REFINERS'		*TOTAL FOR PERIOD*				
STOCKS (Production Minus Disposition)	−983,020	−1.0	−0.6	−2.3	+2.4	+2.3
THESE REFINERS' STOCKS AT END OF PERIOD	5,287,133	5.3	6.3	5.3	7.7	7.6

* PRODUCTION From New Scrap is 999 silver made from in-plant clippings, spillage, sweepings, etc., generated during manufacturing processes; since it is in continuous cycle from new scrap to 999 silver, to new scrap, some like to see the production and disposition totals after deducting the new scrap from both.

THE SILVER INSTITUTE

A WORLDWIDE ASSOCIATION OF MINERS, REFINERS, FABRICATORS AND MANUFACTURERS

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